

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CHEM 107L

Credit Hours: 1

Course Title: Chemistry 107 Laboratory

Course Prerequisites: credit for or enrollment in CHEM 107 or equivalent

Textbook: Neidig H., Gillette M.; Modular Laboratory Program in Chemistry, 2nd edition

Course Description:

This course is designed to provide the laboratory experiences to accompany an introduction to inorganic chemistry. Techniques, calculations, data collection, reporting of results, and safety in the chemical laboratory are emphasized.

Learning Outcomes:

At the end of this course, the student will

- A. demonstrate acceptable and appropriate safety techniques in the chemistry laboratory;
- B. collect, report, analyze and interpret experimental data in the solution of chemical laboratory problems; and
- C. apply chemical concepts and use appropriate equipment to perform wet and dry experiments in the chemistry laboratory.

To achieve the learning outcomes, the student will

- 1. identify laboratory safety practices in the chemical laboratory. (A)
- 2. using mathematical concepts to represent numbers in scientific notation. (B,C)
- 3. determine the number of significant figures in measurements and round properly, based on the mathematical operation. (B,C)
- 4. using mathematical formulas and quotations, recall the units used in the laboratory to measure mass and volume and to express measurements to the proper uncertainty based on the instrument used. (B,C)
- 5. determine the density of substances using measurement and instruments of mass and volume. (B,C)
- 6. name and write the formulas for inorganic compounds classified as ionic compounds, molecules, and acids. (C)
- 7. recognize whether or not a chemical reaction has taken place. (B,C)
- 8. write and balance chemical equations. (C)
- 9. recognize and write a balanced equation for a double replacement reaction. (C)
- 10. use the displacement method of collecting gas over water and the gas laws to calculate the number of moles of a gas produced in a single replacement reaction between magnesium and hydrochloric acid. (B,C)

11. determine the molar concentration of a sodium hydroxide solution by titration techniques. (B,C)
12. determine the molarity of an unknown concentration of an acetic acid solution by using a standardized solution of sodium hydroxide through the technique of titration. (B,C)
13. prepare laboratory reports. (B)

Course Requirements

- minimum of 80% on safety quiz
- demonstrate safe practices in lab
- minimum average of 70% on pre-lab and post-lab tests or minimum 70% on final lab exercise
- satisfactory completion of 5 of 7 assigned PLATO modules
- successful completion of the final practical test

Course Grading Scale:

- A- 90% or more of total possible points and a minimum of 80% on the safety quiz and satisfactory completion of at least 5 of the 7 assigned PLATO modules and the demonstration of safe practices in the laboratory and minimum average of 70% on pre-lab and post-lab tests or minimum of 70% on final lab exercise.
- B- 80% or more of total possible points and a minimum of 80% on the safety quiz and satisfactory completion of at least 5 of the 7 assigned PLATO modules and the demonstration of safe practices in the laboratory and minimum average of 70% on pre-lab and post-lab tests or minimum of 70% on final lab exercise.
- C- 70% or more of total possible points and a minimum of 80% on the safety quiz and satisfactory completion of at least 5 of the 7 assigned PLATO modules and the demonstration of safe practices in the laboratory and minimum average of 70% on pre-lab and post-lab tests or minimum of 70% on final lab exercise.
- D- 60% or more of total possible points and a minimum of 80% on the safety quiz and satisfactory completion of at least 5 of the 7 assigned PLATO modules and the demonstration of safe practices in the laboratory and minimum average of 70% on pre-lab and post-lab tests or minimum of 70% on final lab exercise.
- F- less than 60% of total possible points or less than 80% on the safety quiz or failure to satisfactorily complete at least 5 of the 7 assigned PLATO modules or failure to demonstrate safe practices in the laboratory and minimum average of 70% on pre-lab and post-lab tests or minimum of 70% on final lab exercise.

Reviewed by K. Franks/ May 2009